**Newton’s Gravity Practice Problems (by request: Beth Ann ☺)**

**Directions:** Use your notes on Newton’s Law of Universal Gravitation to complete the following problems.

1. Calculate the force of gravity between two people, each having a mass of 55 kg, standing 22 m apart on the surface of the Moon.

2. Calculate the force of gravity you experience with the Earth!

MEarth = 5.98x1024­ kg

1 lbs. = .45 kg

REarth = 6.37x106 m

3. What would a mouse weigh on the moon?

MMouse = 1.5 kg

MMoon = 7.35x1022 kg

RMoon = 1.74x106 m

1 N = .22481 lbs.

4. Calculate the force of gravity between two people on opposite sides of Earth. Think carefully.

MPerson1 = 85 kg

MPerson2 = 70 kg

REarth = 6.37x106 m

5. Calculate the force of gravity between two stars in a binary star system. One star has a mass of 3.34x1045 kg, and the other star has a mass of 9.87x1030 kg. They are separated by a distance of 95 AU.

1 AU = 149,598,000,000 m